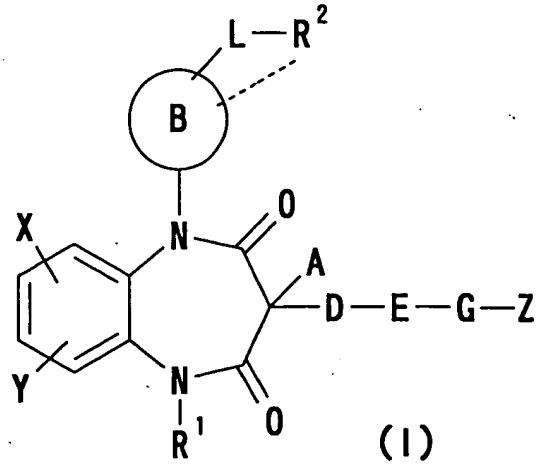
Claims

1. A compound represented by the formula (I)



(I)

wherein ring B represents a cyclic hydrocarbon group which may have substituent(s); Z represents hydrogen atom or a cyclic group which may have substituent(s); R^1 represents hydrogen atom, a hydrocarbon group which may have substituent(s), a heterocyclic group which may have substituent(s) or an acyl group; R^2 represents amino group which may have substituent(s); D represents a bond or a divalent group; E represents a bond, -CO-, $-CON(R^a)-$, -COO-, $-N(R^a)CON(R^b)-$, $-N(R^a)COO-$, $-N(R^a)SO_2-$, $-N(R^a)-$, -O-, -S-, -SO- or $-SO_2-$ (R^a and R^b each independently represents hydrogen atom or a hydrocarbon group which may have substituent(s)); G represents a bond or a divalent group; L represents a bond or a divalent group; A represents hydrogen atom or a substituent; X and Y each represents hydrogen atom or an independent substituent; and ..... represents that R^2 and an atom on ring B may form a ring,

or a salt thereof.

2. The compound according to claim 1, wherein E is

-CO-, -CON(R^a)-, -COO-, -N(R^a)CON(R^b)-, -N(R^a)COO-, -N(R^a)SO_2-, -N(R^a)-, -O-, -S-, -SO- or -SO_2- (R^a and R^b each independently represents hydrogen atom or a hydrocarbon group which may have substituent(s)).

3. The compound according to claim 1, wherein L is

(1) a bond or,

(2) a divalent hydrocarbon group which may contain -O- or -S- and may possess 1 to 5 substituents selected from

i) a C_{1-6} alkyl group,

ii) a halogeno-C_{1-6} alkyl group,

iii) phenyl group,

iv) benzyl group,

v) amino group which may have substituent(s),

vi) hydroxy group which may have substituent(s), and

vii) carbamoyl groups or thiocarbamoyl groups which each may be substituted by:

a) a C_{1-6} alkyl group,

b) a phenyl group which may have substituent(s), or

c) a heterocyclic group which may have substituent(s).

4. The compound according to claim 1, wherein Z is a cyclic group which may have substituent(s).

5. The compound according to claim 1, wherein D is a divalent group bonded to the ring through a carbon atom.

6. The compound according to claim 1, wherein ring B is benzene ring which may have substituent(s) and L is a C_{1-6} alkylene group.

7. The compound according to claim 1, wherein G represents a divalent hydrocarbon group which may have substituent(s) and ring B does not form a ring together with

R^2.

8. The compound according to claim 1, wherein A is hydrogen atom, ring B is benzene ring, Z is a phenyl group substituted by a halogen, and R^1 is a C_{1-6} alkyl or C_{7-14} aralkyl group which each may be substituted by substituent(s) selected from (1) hydroxy, (2) phenyl, (3) a C_{1-6} alkyl carbonyl or a C_{6-14} aryl-carbonyl, and (4) amino groups which may be substituted by a C_{1-6} alkyl sulfonyl or a C_{6-14} aryl-sulfonyl.

9. The compound according to claim 1, wherein X and Y each independently is hydrogen atom, a halogen, hydroxy, a C_{1-6} alkoxy, a halogeno-C_{1-6} alkoxy, a C_{7-14} aralkyloxy, a benzoyl-C_{1-6} alkoxy, a hydroxy-C_{1-6} alkoxy, a C_{1-6} alkoxy-carbonyl-C_{1-6} alkoxy, a C_{3-14} cycloalkyl-C_{1-6} alkoxy, an imidazol-1-yl-C_{1-6} alkoxy, a C_{7-14} aralkyloxy-carbonyl-C_{1-6} alkoxy, or a hydroxyphenyl-C_{1-6} alkoxy;

ring B is benzene ring which may be substituted by a C_{1-6} alkoxy, or tetrahydroisoquinoline ring or isoindoline ring which is formed by combination with R^2;

Z is a C_{6-14} aryl group, a C_{3-10} cycloalkyl group, piperidyl group, thienyl group, furyl group, pyridyl group, thiazolyl group, indanyl group or indolyl group which may have 1 to 3 substituents selected from a halogen, formyl, a halogeno-C_{1-6} alkyl, a C_{1-6} alkoxy, a C_{1-6} alkyl-carbonyl, oxo and pyrrolidinyl;

A is hydrogen atom;

D is a C_{1-6} alkylene group;

G is a bond, or a C_{1-6} alkylene group which may contain phenylene and may be substituted by phenyl;

R^1 is hydrogen atom, a C_{1-6} alkyl group, a C_{2-6} alkenyl group, a C_{6-14} aryl group or a C_{7-14} aralkyl group which each may be substituted by substituent(s) selected from (1) a halogen, (2) nitro, (3) amino which may have 1 or 2 substituents selected from a C_{1-6} alkyl which may be substituted by a C_{1-6} alkyl-carbonyl, benzoyloxycarbonyl and a C_{1-6} alkylsulfonyl, (4) hydroxy which may be substituted by (i) a C_{1-6} alkyl which may be substituted by hydroxy, a C_{1-6} alkyl-carbonyl, carboxy or a C_{1-6} alkoxy-carbonyl, (ii) phenyl which may be substituted by hydroxy, (iii) benzoyl or (iv) a mono- or di- C_{1-6} alkylamino-carbonyl, (5) a C_{3-6} cycloalkyl, (6) phenyl which may be substituted by hydroxy or a halogeno-C_{1-6} alkyl and (7) thienyl, furyl, thiazolyl, indolyl or benzyloxycarbonylpiperidyl;

R^2 is (1) unsubstituted amino group, (2) piperidyl group or (3) amino which may have 1 or 2 substituents selected from (i) benzyl, (ii) a C_{1-6} alkyl which may be substituted by amino or phenyl, (iii) a mono- or di-C_{1-6} alkyl-carbamoyl, or a mono- or di-C_{1-6} alkyl-thiocarbamoyl, (iv) a C_{1-6} alkoxy-carbonyl, (v) a C_{1-6} alkyl-sulfonyl, (vi) piperidylcarbonyl and (vii) a C_{1-6} alkyl-carbonyl which may be substituted by a halogen or amino;

E is a bond, $-CON(R^a)-$, $-N(R^a)CO-$, $-N(R^a)CON(R^b)-$ (R^a and R^b each represents hydrogen atom or a C_{1-6} alkyl group);

L is a C_{1-6} alkylene group which may contain -O- and may be substituted by a C_{1-6} alkyl.

10. The compound according to claim 1, wherein X and Y each independently is hydrogen atom, a halogen, hydroxy or a C_{1-6} alkoxy;

ring B is benzene ring or, by combination with R^2, tetrahydroisoquinoline ring or isoindoline ring;

Z is phenyl group which may be substituted by a halogen, D is a C_{1-6} alkylene group, G is a C_{1-6} alkylene group;

R^1 is a C_{1-6} alkyl group or a C_{7-14} aralkyl group which each may be substituted by substituent(s) selected from (1) hydroxy, (2) phenyl and (3) amino which may be substituted by a C_{1-6} alkyl-carbonyl or a C_{1-6} alkylsulfonyl;

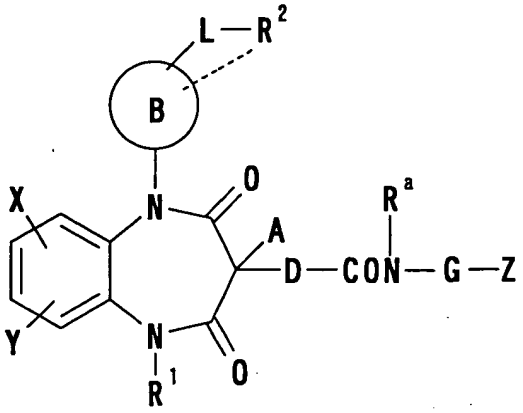
R^2 is unsubstituted amino group;

E is -CONH-;

L is a C_{1-6} alkylene group.

11. A prodrug of the compound according to claim 1 or a salt thereof.

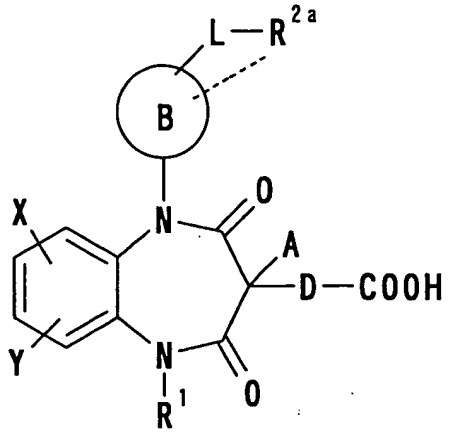
12. A process for producing a compound of the formula (I-a)



(I-a)

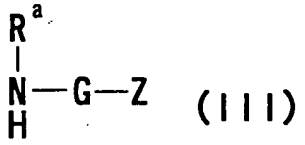
[wherein the symbols have the same meanings as described above] or a salt thereof which comprises:

reacting a compound represented by the formula (IIa)



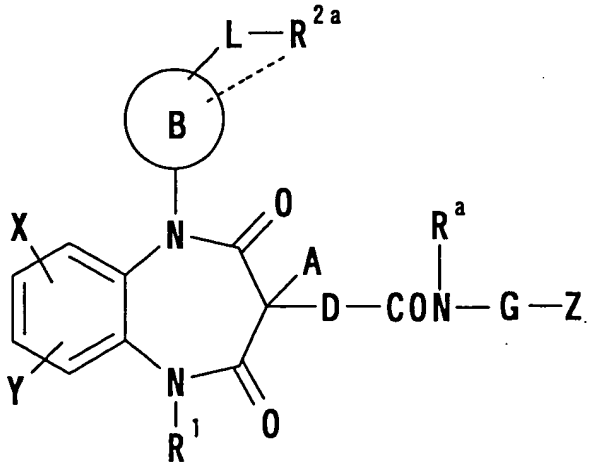
(IIa)

[wherein R^{2a} represents amino group which may be protected and substituted, and other symbols have the same meanings as described in claim 1], a reactive derivative thereof or a salt thereof, with a compound represented by the formula



(III)

[wherein the symbols have the same meanings as described in the claim 1] or a salt thereof to produce a compound of the formula (Ia-a)



(Ia-a)

[wherein the symbols have the same meanings as described above] or a salt thereof, and optionally, subjecting it to

de-protecting reaction.

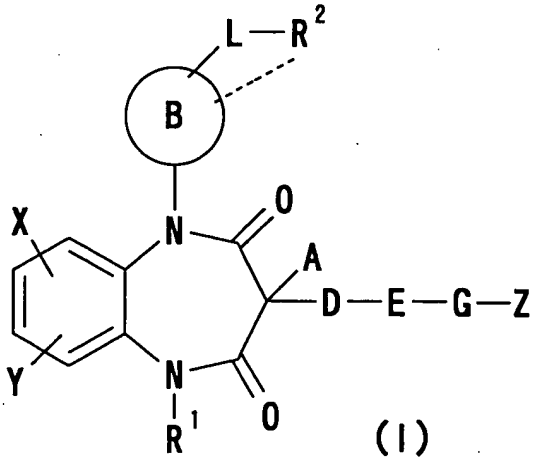
13. A pharmaceutical composition which comprises a compound according to claim 1 or a salt thereof.

14. A pharmaceutical composition according to claim 13 which is a somatostatin receptor function regulator.

15. A pharmaceutical composition according to claim 14 wherein the somatostatin receptor function regulator is a somatostatin receptor agonist.

16. A pharmaceutical composition according to claim 13 which is an agent for preventing or treating diabetes, obesity, diabetic complications or intractable diarrhea.

17. A method for regulating a somatostatin receptor function which comprises administering a compound represented by the formula (I)

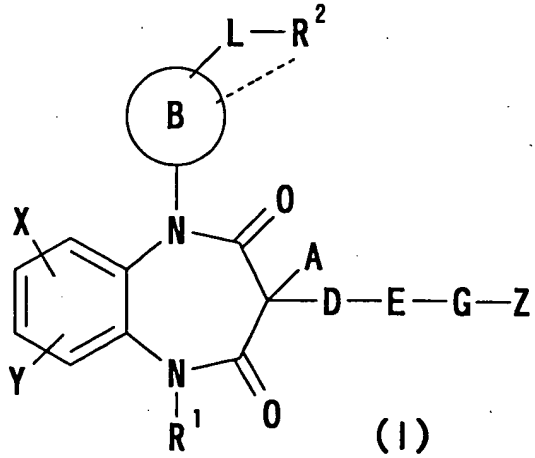


(I)

[wherein ring B represents a cyclic hydrocarbon group which may have substituent(s); Z represents hydrogen atom or a cyclic group which may have substituent(s); R^1 represents hydrogen atom, a hydrocarbon group which may have substituent(s), a heterocyclic group which may have substituent(s) or an acyl group; R^2 represents amino group which may have substituent(s); D represents a bond or a

divalent group; E represents a bond, -CO-, -CON(R^a)-, -COO-, -N(R^a)CON(R^b)-, -N(R^a)COO-, -N(R^a)SO_2-, -N(R^a)-, -O-, -S-, -SO- or -SO_2- (R^a and R^b each independently represents hydrogen atom or a hydrocarbon group which may have substituent(s)); G represents a bond or a divalent group; L represents a bond or a divalent group; A represents hydrogen atom or a substituent; X and Y each represents hydrogen atom or an independent substituent; and ..... represents that R^2 and an atom on ring B may form a ring] or a salt thereof.

18. Use of a compound represented by the formula (I)



(I)

[wherein ring B represents a cyclic hydrocarbon group which may have substituent(s); Z represents hydrogen atom or a cyclic group which may have substituent(s); R^1 represents hydrogen atom, a hydrocarbon group which may have substituent(s), a heterocyclic group which may have substituent(s) or an acyl group; R^2 represents amino group which may have substituent(s); D represents a bond or a divalent group; E represents a bond, -CO-, -CON(R^a)-, -COO-, -N(R^a)CON(R^b)-, -N(R^a)COO-, -N(R^a)SO_2-, -N(R^a)-, -O-, -S-, -SO- or -SO_2- (R^a and R^b each independently represents hydrogen atom or a hydrocarbon group which may have

substituent(s)); G represents a bond or a divalent group; L represents a bond or a divalent group; A represents hydrogen atom or a substituent; X and Y each represents hydrogen atom or an independent substituent; and ..... represents that R^2 and an atom on ring B may form a ring] or a salt thereof, for manufacturing a medicament for regulating a somatostatin receptor function.